

Stage 3: Home sweet home

Concept:

- Students to consider what a habitat is and the basic requirements that make a habitat.
- Connectedness of species and habitats, why is this important.
- How humans play a role in the health of a habitat.

Student inquiry:

- What are the main components of a habitat?
- What types of habitats can be found along the Western Australian coastline?
- What are some of the most important habitats for threatened and migratory species? Why are they important? How do species interact in these habitats?
- How can the physical condition of the habitat change?
- How do human activities impact coastal and marine habitats?
- How can you and other members of the community help protect important habitat?

AUSTRALIAN CURRICULUM – SCIENCE

Year 4

Living things depend on each other and the environment to survive. (ACSSU073)

Year 5

Living things have structured features and adaptations that help them survive in their environment. (ACSSU043)

Year 6

The growth and survival of living things are affected by physical conditions of their environment. (ACSSU094)



Top: Tent Island Nature Reserve. Photo – DBCA Above left: Green turtle at Ningaloo Marine Park. Photo – Johnny Gaskell
Above right: Wedge-tailed shearwater burrow. Photo – Carolyn Williams/DBCA

STAGE 3: HOME SWEET HOME

TEACHER INFORMATION

Background information for teachers

A healthy habitat provides plants and animals with the basic resources to survive and reproduce: food, water, shelter and space. Healthy, undisturbed habitats give species the best chance of survival by offering protection against extreme weather events, predators, disease and other threats.

Western Australia's coastline spans more than 13,500km from the cold temperate waters of the Southern Ocean to the northern tropical waters of the Kimberley and provides a vast array of habitats supporting a great diversity of life, including many threatened and migratory species. Islands, coral reefs, mangroves, seagrass meadows, sandy beaches, rocky shores, bays, estuaries and lagoons are among some of the essential habitats needed for survival by marine turtles, shorebirds, seabirds, whales, dolphins, dugongs and sawfish.

Many of these species require more than one habitat to carry out the functions of life: eat, rest and reproduce. A habitat can support many different species at various stages of life. The interconnectedness of species and habitats forms the basis of a functioning ecosystem.

Coastal and offshore habitats of Western Australia provide some of the healthiest intact habitats in the world for many threatened and migratory species. Sawfish are considered globally to be one of the most threatened marine fish and north-west Western Australia is believed to be the last stronghold of the green sawfish. Historically, the green sawfish had a significant distribution throughout the Indian and Pacific region, their range has now been reduced dramatically. Even in Australia, populations are no longer found in Victoria, New South Wales and southern Queensland. Recent research has identified pupping grounds in the Pilbara and this discovery gives us an opportunity to learn about how sawfish interact with their habitat and take action to protect important habitat. The world's largest remaining population of hawksbill turtles is found in Western Australia's coastal waters and humpback whale numbers have increased substantially making the Western Australian population one of the healthiest in the world. The eastern side of Exmouth Gulf, Barrow Islands, the Montebello Islands, Eighty Mile Beach and Roebuck Bay are internationally recognised Important Bird Areas because they support globally significant numbers of migratory shorebirds.

Coastal and marine habitats are not only highly valued for threatened and migratory species but also for the wellbeing of people. Looking after and protecting these habitats is essential. Natural events such as fires, cyclones and increased ocean temperatures, along with human activities such as coastal development, recreational activities, commercial and recreational fishing can change the environmental conditions and severely affect habitat health.



Above left: Shorebirds foraging on Simpson Island Nature Reserve. Photo – DBCA **Above right:** Turtle tracks on Locker Island Nature Reserve. Photo – DBCA

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TEACHER INFORMATION

Teacher directions:

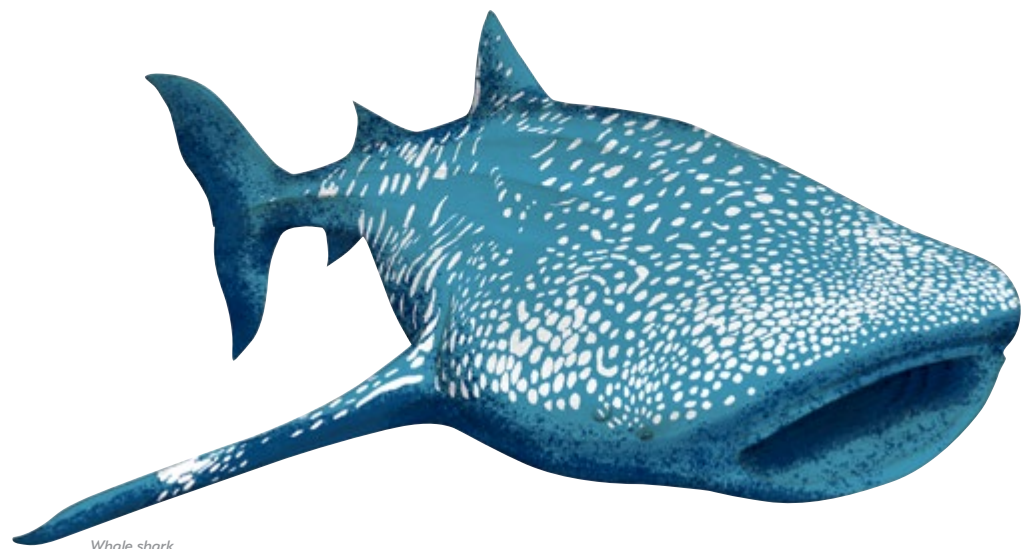
1. As a class, discuss what a habitat is and identify the main components. (Shelter, food, a place that allows reproduction etc.)
2. Brainstorm the different habitats that marine wildlife may need (beaches for nesting, seagrass beds for food supply, open ocean for hunting). Ask a series of questions to get the students thinking. Why are these habitats important? What would happen if they could no longer use that habitat?
3. Give students Activity sheet 3.1 to complete.
4. Have students discuss their answers with the class or a partner.
5. Ask the students to think about how more than one species live in the same habitat. Do they rely on the same food source? Is the habitat used at different stages of the species life cycle?
6. Discuss the concept that the physical condition of the environment can change due to natural and human causes. Ask students to list natural causes that may impact on a species (such as seasonal changes, extreme weather events, higher ocean temperatures) and human causes (such as coastal development, commercial and recreational fishing practices, recreational activities, pollution).
7. Give students Activity sheet 3.2. As individuals or groups, students investigate a threatened or migratory species found along the Western Australian coast and prepare a poster or presentation to educate others and raise awareness of threatened species and the pressures on them. Students will reflect on knowledge gained in Stages 1 and 2.

Resources:

- Resource 1: Species profile Posters 1, 2, 3, 4
- Resource 2: Habitats Poster 5
- Resource 3: Pressures Posters 6

Additional resources:

- **Marine wildlife of WA's north-west identification guide**
dpaw.wa.gov.au/images/documents/conservation-management/marine/20170303_marine_life_northwest_finalweb.pdf
- **Shorebirds and seabirds of the Pilbara coast and islands**
dpaw.wa.gov.au/images/documents/conservation-management/wetlands/20170167_pilbara_shorebirds_and_seabirds_of_the_pilbara_coast_and_islands_web.pdf



Whale shark

Activity sheet 3.1

1. Can you answer the following questions for the pictured habitats?
 - a) Name a threatened or protected species that uses this habitat?
 - b) What components of the habitat are important for that species?
 - c) What can impact on these habitats?



Mangrove forest

a

b

c

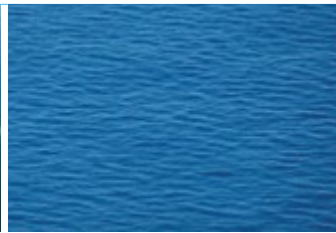


Island

a

b

c



Open ocean

a

b

c



Intertidal flats

a

b

c



Sandy beaches

a

b

c



Estuary

a

b

c



Seagrass meadow

a

b

c



Coral reef

a

b

c



Activity sheet 3.2

Investigate a threatened or protected species that can be found along the Western Australian coast and prepare a poster or presentation to educate others and raise awareness of threatened species and the pressures on them.

Use the questions below to help guide your research.

1. Species?

2. Conservation status?

3. What are this species' distinctive physical characteristics?

4. What are its habitat preferences? Does it have specific habitat requirements for different life cycle stages?

5. Does it prefer a certain climate?

6. What does it eat?

7. In Western Australia, where are you likely to see this species? Show this on a map.

8. Name at least one pressure that can affect this species in its habitat. Describe how it impacts the species.
